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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,650	12/30/2004	Ian D French	GB02 0106 US	2758
24738. 7590 09/28/2007 PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 370 W. TRIMBLE ROAD MS 91/MG SAN JOSE, CA 95131			EXAMINER GOODWIN, DAVID J	
			ART UNIT	PAPER NUMBER
			2818	
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			09/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/519,650

Applicant(s)

FRENCH ET AL.

Examiner

David Goodwin

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 through 3 and 9 through 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao (US 5,882,827) in view of Dai (US 6,045,954) in view of Nozawa (US 2002/0061452).
3. Regarding claim 1.
4. Nakao teaches a mask comprising a mask substrate (1) a half tone mask material (3) arranged in a pattern across the mask substrate (1) and a light-blocking layer (5) arranged in a pattern across the half tone layer (3).
5. Nakao does not teach that the half tone layer comprises silicon nitride.
6. Dai teaches the composition of a half tone mask. Said composition being a silicon rich nitride layer with 60% nitrogen (column 3 lines 60-65). And a thickness of between 1736 and 748 angstroms (column 4 lines 60-65).
7. It would have been obvious to one of ordinary skill in the art to use a silicon rich nitride layer having 60% nitrogen in order to control the optical and etch characteristics of the mask.

Art Unit: 2818

8. Nakao in view of Dai does not teach that mask has a thickness and nitrogen content to provide a transmittance of 20%-80%.

9. Nazawa teaches a mask having a transmittance of 65% (paragraph 0010).

10. It would have been obvious to one of ordinary skill in the art to select the parameters of a mask to provide a transmittance of 65% in order to be sufficient for mask inspection.

11. Further, differences in transmittance will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such transmittance are critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the workable ranges by routine experimentation". *In re Aller*, 220 F.2d 454,456,105 USPQ 233, 235 (CCPA 1955).

Since the applicant has not established the criticality (see next paragraph) of the transmittance, and this transmittance has been used in similar devices in the art (see, e.g., Nazawa) it would have been obvious to one of ordinary skill in the art to use these values.

CRITICALITY

The specification contains no disclosure of either the critical nature of the claimed thickness or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

12.

13. Regarding claim 2.

14. Nakao teaches a mask comprising a mask substrate (1) a half tone mask material (3) arranged in a pattern across the mask substrate (1) and a light-blocking layer (5) arranged in a pattern across the half tone layer (3).

15. Nakao does not teach the composition of the half tone layer.

16. Dai teaches the composition of a half tone mask. Said composition being a silicon rich nitride layer with 60% nitrogen (column 3 lines 60-65). The optical band gap of silicon nitride is an inherent characteristic of the material used.

17. It would have been obvious to one of ordinary skill in the art to use a silicon rich nitride layer having 60% nitrogen in order to control the optical and etch characteristics of the mask.

18. Regarding claim 3.

19. Dai teaches that the thickness is between 1736 and 748 angstroms (column 4 lines 60-65).

20. Regarding claim 9.

21. Nakao teaches a mask comprising a mask substrate (1) a half tone mask material (3) arranged in a pattern across the mask substrate (1) and a light-blocking layer (5) arranged in a pattern across the half tone layer (3).

22. Nakao does not teach that the half tone layer comprises silicon nitride.

23. Dai teaches the composition of a half tone mask. Said composition being a silicon rich nitride layer with 60% nitrogen (column 3 lines 60-65). And a thickness of between 1736 and 748 angstroms (column 4 lines 60-65).

Art Unit: 2818

24. It would have been obvious to one of ordinary skill in the art to use a silicon rich nitride layer having 60% nitrogen in order to control the optical and etch characteristics of the mask.

25. Differences in concentration and band gap will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration and/or bandgap are critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the workable ranges by routine experimentation". *In re Aller*, 220 F.2d 454,456,105 USPQ 233, 235 (CCPA 1955).

Since the applicant has not established the criticality (see next paragraph) of the metal liner thickness or band gap, and this thickness has been used in similar devices in the art (see, e.g., Nakao and Dai) it would have been obvious to one of ordinary skill in the art to use these values.

CRITICALITY

The specification contains no disclosure of either the critical nature of the claimed thickness or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

26. Regarding claim 10.

28. Differences in thickness and band gap will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such thickness and/or bandgap are critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the workable ranges by routine experimentation". *In re Aller*, 220 F.2d 454,456,105 USPQ 233, 235 (CCPA 1955).

Since the applicant has not established the criticality (see next paragraph) of the metal liner thickness or band gap, and this thickness has been used in similar devices in the art (see, e.g., Nakao and Dai) it would have been obvious to one of ordinary skill in the art to use these values.

CRITICALITY

The specification contains no disclosure of either the critical nature of the claimed thickness or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

29. Regarding claim 11.

30. Nazawa teaches a mask having a transmittance of 65% (paragraph 0010).

31. It would have been obvious to one of ordinary skill in the art to select the parameters of a mask to provide a transmittance of 65% in order to be sufficient for mask inspection.

32. Further, differences in transmittance will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such transmittance are critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the workable ranges by routine experimentation". *In re Aller*, 220 F.2d 454,456,105 USPQ 233, 235 (CCPA 1955).

Since the applicant has not established the criticality (see next paragraph) of the transmittance, and this transmittance has been used in similar devices in the art (see, e.g., Nazawa) it would have been obvious to one of ordinary skill in the art to use these values.

CRITICALITY

The specification contains no disclosure of either the critical nature of the claimed thickness or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Conclusion

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Goodwin whose telephone number is (571)272-8451. The examiner can normally be reached on Monday through Friday, 9:00am through 5:00pm.

Art Unit: 2818

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on (571)272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJG

STEVEN LOKE
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Steven Loke", is written below the printed name and title.